

Atty. Dkt. No. 074022-3303

**Remarks**

Support for the amendment of claims 53 and 69 is found at page 40, lines 6-20 of the specification.

The Examiner rejects claims 51-52, 54-58, 61-63, 66-68, 70-74, 77-79, and 82 under 35 U.S.C. 102(b) as allegedly being anticipated by Bogart (U.S. Patent 5,468,606). This rejection is respectfully traversed.

The present claims recite a support having an attachment layer comprised of diamond-like carbon, wherein the attachment layer captures the analyte of interest for detection by binding the analyte directly to the diamond-like carbon. Therefore, in order to bind the analyte directly to the diamond-like carbon, the attachment layer must have access to the analyte sample.

Bogart does not disclose a support having an attachment layer comprised of diamond-like carbon, as presently claimed. Instead, Bogart discloses a support having an anti-reflective layer that can be comprised of diamond (Col. 5, lines 27-35). The anti-reflective layer of Bogart is not an attachment layer and cannot function according to the presently claimed invention because it is not exposed to the analyte. Rather, it is disclosed as being situated between the substrate and the attachment layer (Col. 5, lines 15-26). Bogart discloses that "an attachment layer is interposed between the optical material and the receptive material" (Col. 5, lines 24-26). Therefore, the diamond material disclosed by Bogart is not contained in the attachment layer, which is disclosed as a separate and distinct layer, but is instead part of the anti-reflective layer. Therefore, the presently claimed invention is not anticipated by Bogart.

The Examiner rejects claims 67-68, 71-67 and 82 under 35 U.S.C. 103(a) as allegedly being unpatentable over Kobashi in view of Bogart. This rejection is respectfully traversed.

In order to establish a *prima facie* case of obviousness, it is necessary that the prior art disclose each and every limitation of the claim, that there is a reasonable expectation of success, and that there is some motivation, either in the prior art references or in the knowledge of the

Atty. Dkt. No. 074022-3303

person of ordinary skill in the art, to make the asserted combination or modify or combine the reference teachings (MPEP 2142). Kobashi discloses diamond film biosensor electrodes, for use in detecting substances in a sample. Kobashi discloses that the thickness of the undoped diamond base layer is between 1 and 50 um (i.e., 10,000 – 500,000 angstroms), while the present claims recite a thickness of 50-500 angstroms, a maximum of only 1/20<sup>th</sup> that disclosed by Kobashi (Col. 7, line 16). As the Examiner acknowledges, Kobashi does not disclose a diamond thickness within the present claims. But Kobashi also notes that the thickness of diamond is suggested from “a viewpoint of performance and cost.” (Col. 7, line 15). Therefore, the person of ordinary skill in the art would find no motivation to utilize a diamond thickness of only 1/20<sup>th</sup> or less than that taught by Kobashi, since Kobashi indicates that the prescribed thicknesses are made from a viewpoint of performance. Therefore, such a radical departure from the thicknesses disclosed would lead the person of ordinary skill to believe that the performance of the electrode would be inferior. Accordingly, the presently claimed invention is not obvious over Kobashi in view of Bogart.

Additionally, Kobashi does not disclose a support as recited in claim 67 because the electrode of Kobashi does not comprise an attachment layer comprising a capture molecule bound to the diamond-like carbon. Instead, the electrode utilizes diamond only in the base layer (structure 31 in Fig 7; Col. 7, line 5). Claim 67 recites that the attachment layer comprises a capture molecule bound to the diamond-like carbon. But in the electrode of Kobashi, the bioidentifier is coated onto the working electrode, which is not disclosed as being made of diamond-like carbon. Therefore, the prior art does not disclose each limitation of the claim. Accordingly, for this independent reason as well, the claims are not rendered obvious by even the improper combination of Kobashi in view of Bogart.

The Examiner rejects claims 69-70 under 35 U.S.C. 103(a) as allegedly being unpatentable over Kobashi in view of Bogart, and further in view of Yu. The Examiner further rejects claims 77-79 under 35 U.S.C. 103(a) as allegedly being unpatentable over Kobashi in view of Bogart, and further in view of Turner. Each of these rejections depends on the validity of

Atty. Dkt. No. 074022-3303

the combination of Kobashi and Bogart. For reasons explained above, the combination of Kobashi and Bogart is improper, and even improperly combined does not disclose all of the limitations of the claims. Therefore, the addition of these references still does not achieve a *prima facie* case of obviousness. These references also fail to supply the missing claim limitations noted above.

Atty. Dkt. No. 074022-3303

**Conclusion**

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested and that the rejections be withdrawn.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 50-0872. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 50-0872. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. § 1.136 and authorizes payment of any such extensions fees to Deposit Account No. 50-0872.

Respectfully submitted,

Date March 11, 2004By Richard San Pietro

Richard J. Warburg  
FOLEY & LARDNER, LLP  
Customer Number: 23620



23620

PATENT TRADEMARK OFFICE  
Telephone: (858) 847-6700  
Facsimile: (858) 792-6773

Richard San Pietro  
Attorney for Applicant  
Registration No. 45,071